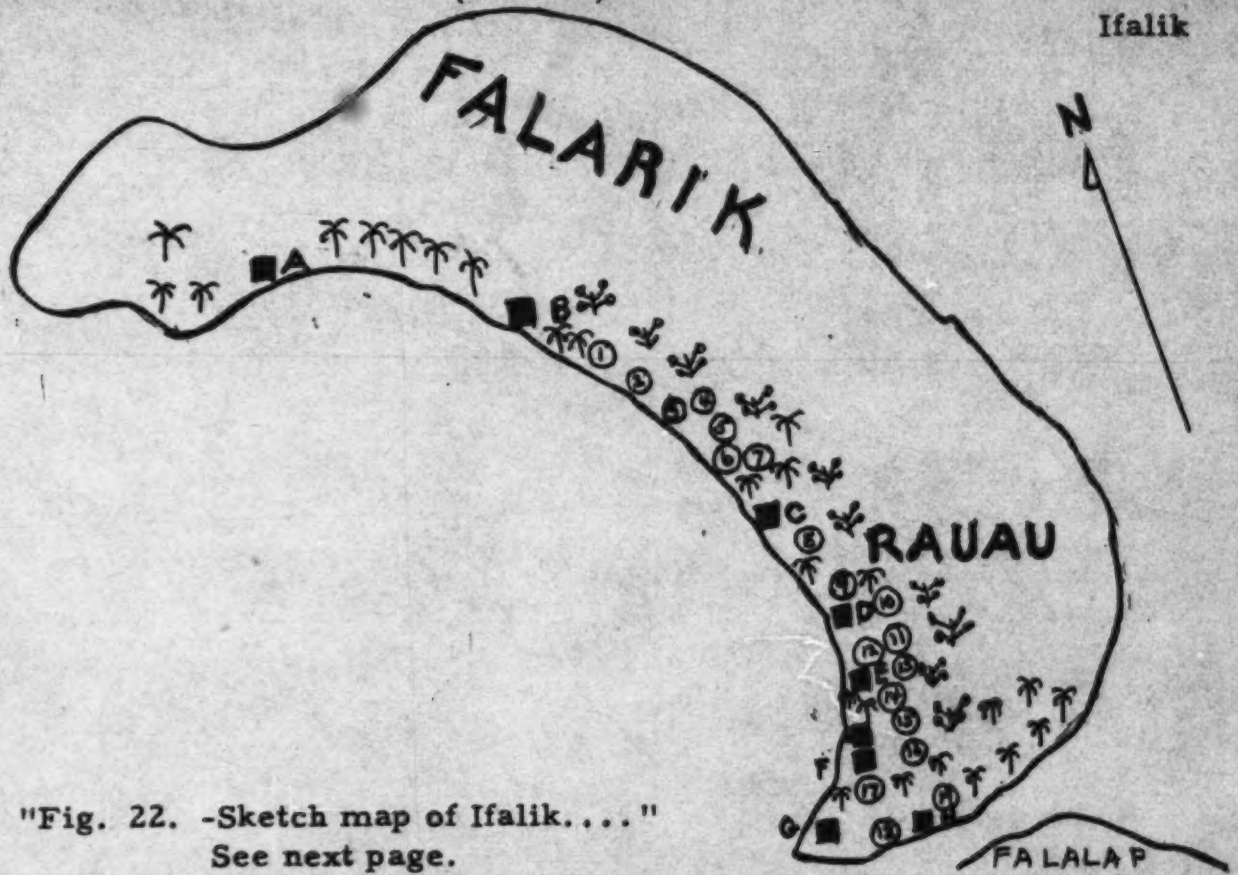
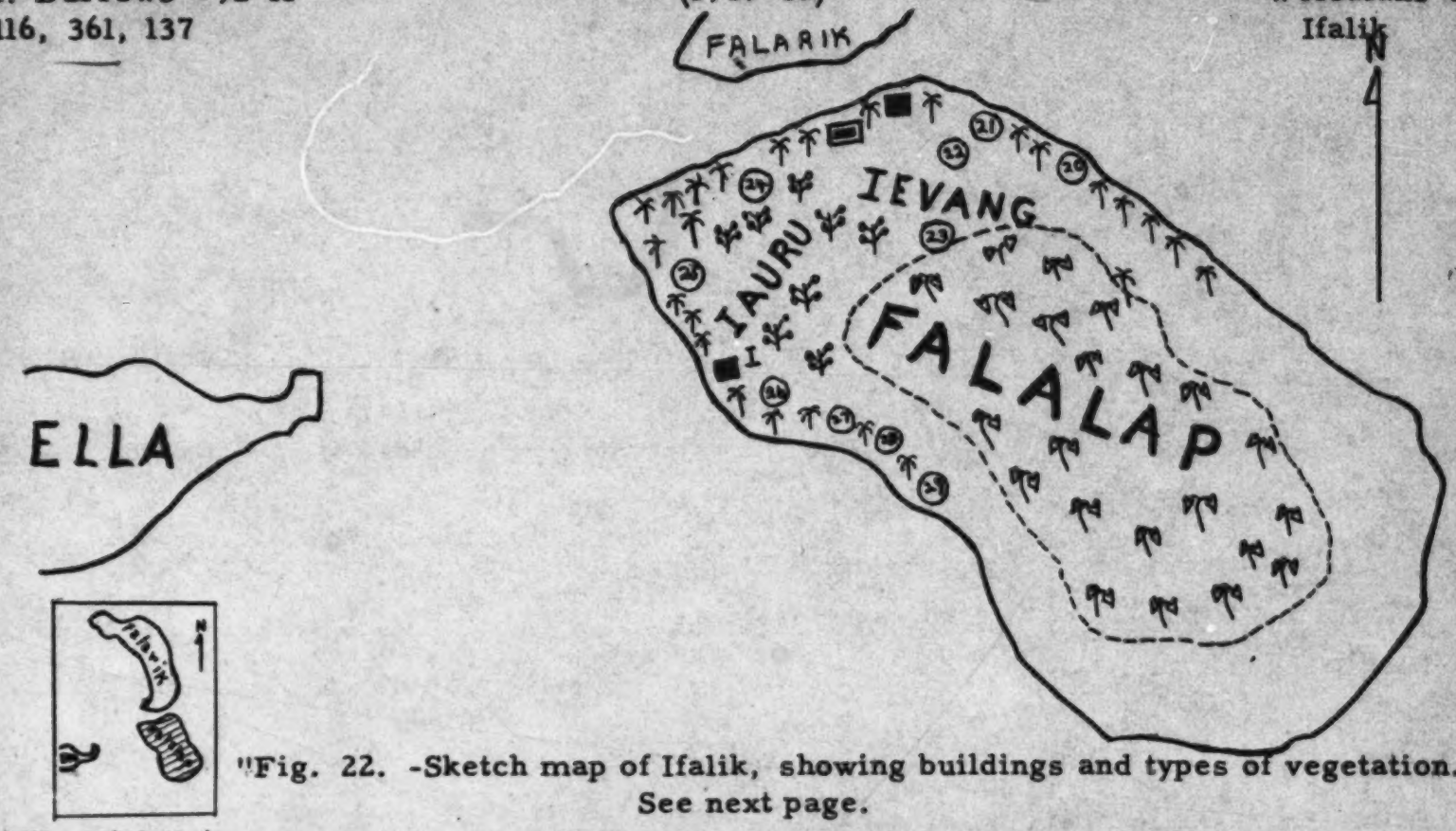


"Fig. 22. -Sketch map of Ifalik...."
See next page.

1: Burrows--92-A
116, 361, 137

(1947-48)

Woleaians-2
Ifalik



"Fig. 22. -Sketch map of Ifalik, showing buildings and types of vegetation."
See next page.

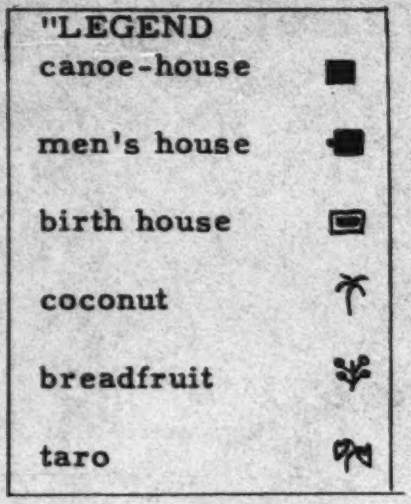


Fig. 22. -Sketch map of Ifalik, showing buildings and types of vegetation.
Numbers designate homesteads, from north to south. Their native names follow: 1, FalolorIk; 2, Atrovalū; 3, Atiuwan; 4, Atielū; 5, Nuteitei; 6, Nimau; 7, Bwènnau; 8, Falegumei; 9, Aulivang; 10, Faleoulèrix; 11, Uluas; 12, Fanneserax; 13, Xalingelū; 14, Foraix; 15, Welipeien; 16, Somat; 17, Falevelū; 18, Uelepi; 19, Uarigin; 20, Metalegop; 21, Apilimat; 22, Falūn; 23, Weluāra; 24, Gauong; 25, Auriela; 26, Leagago; 27, Fal i Trel; 28, Arotrang; 29, Ilux.
Canoe-houses, from north to south: A, Pa'ugop; B, Gajuteling; C, Fan ni Wā; D, Sabwōlap; E, Fale Pëngā; F, Katēlū; G, Fan ni Wong; H, Paurël; I, Gavilea."

fanüuá is the boat house. Externally it is like the dwelling house, except that it is open on all sides, and has larger dimensions. (see drawing 157). The canoe houses are erected by the various parts of the villages, and belong to them. Before the last great typhoon the number of canoe houses was considerably larger than it was in 1909. The division of the canoe houses was as follows:

Part of the village:	in 1909:	Number of canoe houses before the typhoon:
Gajudöllin	1	1
Ledjöurö	1	1
Lawuau	1	1
Jiwän	1	3
Jör	1	3
Sägo	0	1
Sawölöb	0	1

Sägo and Sawölöb do not have any more canoe houses; the natives in the former part bring their boats to Gajudöllin and Ledjöurö, while the men in the latter shelter theirs in Lawuau.

The inhabitants do not distinguish between the village and the island; fălü is the word for both. Only Felādjĭk and Falālăp are settled, and on the northern side. The farms lie scattered along the coast. Each house has a water-hole (ganĭralu).

All of the land is divided into plots (bugodăl), which have special names, and these also apply to the houses, which are built on them.

a) the village Felādjĭk on the main island is separated into the following districts:(see drawing 159)

1. Săgo with the huts 1-4
2. Gajudŏllin 5-13
3. Ledjŏurŏu 14-21
4. Sawōlŏb 22-27
5. Lawuaû 28-43.

The districts 1-3 are included in Felādjĭk, the other two, 4 and 5 are Lawuaû. The oldest part of this settlement is Lawuaû, and the other sections were settled from here. This original portion also served as a residence for the king of the island group, Daoreligăr [61] and his assistant chief Sairū. A long, long time ago Săgo is also supposed to have had a chief, but his family died out. [AN: The names of the houses and their inhabitants, pages 61-65 of source, have been omitted.] [65]

b) The village on Falālăp Island [AN: see Fig. 160] is divided into two districts, Jŏr

and Jiwăn, in other words, into a southern and a northern part. This settlement is under the authority of Daoreligăr, who formerly lived in Jiwăn, and later moved over into the home of his wife. If the legend is true, the first chief of this island group, the man from Yap, Mōdj, settled in Jiwăn. [AN: the names of the plots with the houses and inhabitants, pages 66-71 of source, have been omitted.] [71]

c) Elă Island is uninhabited. The land is divided among the various houses. [AN: the names of the plots of land have been omitted.]

2: Damm et al. --139 [2] (1909) 1938 Woleaians
116, 361 Aurupik

There are settlements on the large island and on Uäu. The population on Aurepik is divided into two "farms" (Valiáureg [Krämer], or Waliáudry [Hellwig], and Roñali [Krämer]), but there are only a few huts in each. On Uäu, the colony consists of two larger houses, which stand on high stone platforms. In addition, Sarfert also found a little hut, faced with coconut mats, which was inhabited by an old man. The natives said that this small colony was only used occasionally.

2: Damm et al. --185-186 (1909) 1938 Woleaians
116, 162, 361 Faraulep

There are villages on the main island Faraulip and on Pix; but Hambruch found that the third island Ead was uninhabited, and only stone pedestals overgrown with plants and abandoned taro fields gave evidence that it was formerly settled. The colonies belong to a chief and two sub-chiefs. On Faraulip there are eighteen dwellings, four blood houses and one spirit house. [CS: Omission of the table describing the residents of each one, page 185-186] [186] So in this colony there were 22 men, 28 women, 17 boys, 11 girls; a total of 78 persons, in addition to 14 who were at Yap at the moment. The total population was therefore 92.

3: Thilenius and Hellwig--245 (1909-10) 1927 Woleaians
116, 361 Aurupik

The inhabitants live in two farmsteads, Valiaureg and Rongali, where there are but a few well-built and neat houses... The house of the chief is built on a stepped stone-foundation which is ca. 2 meters high. On a...well-cultivated place, neatly covered with coral gravel, Hambruch discovered a house with a grave nearby.

3: Thilenius and Hellwig--254 (1909-10) 1927 Woleaians
116, 361, 342 Woleai

The north-eastern section of the island. . .is part of the Pūyod region which belongs to the chief Mătewerit who is in Elato at present. There are eight farmsteads in this region.

Adjoining to the south-west--the boundary line runs across the middle of the inland lake--is Lūyapūdam (Lūyab pidăm) with five farmsteads; this region belongs to Wuĕlĭyar (Uélĭyar); Tăwoyāb, the south-western end of the island with its six farmsteads belongs to the chief Iyérimar. Each one of these three regions has two canoe houses, and several farmsteads consist of work- and cook-houses or sheds. Ghost- and menstruation-houses could not be seen. The wooden walls of these houses consist of planks which were vertically inserted between frame-beams.

3: Thilenius and Hellwig--258-259 (1909-10) 1927 Woleaians
116, 161, 361, 621

On Faraulip Hambruch had counted 2 villages under one chief and two lesser chiefs; 18 dwelling houses, 4 menstruation houses, 1 ghost house. Population figure: 96 (14 of them had gone to Yap). The island of Pig is smaller than [259] Faraulip...17 dwelling houses, 14 cook houses, two ghost houses, and 59 inhabitants were counted. In earlier times the population was larger. The deserted station of a Japanese merchant could also be seen. The third little island of this group, Eat, is uninhabited since the typhoon.

3: Thilenius and Hellwig--263 (1909-10) 1927 Woleaians
116, 361, 162 Elato

There were on Elato 26 farmsteads with 19 permanent dwelling and sleeping houses and a number of primitive mat-houses. The population consisted of 87 persons. In addition there were two Wólea families whose members lived alternately in Elato or in Wólea, and there were finally 180 typhoon-refugees from Wólea.

The largest and at the same time the principal island of Lámotrek does not have a special name, but is called after the lagoon, at the eastern end of which it is located. From S to N it is approximately 1250 meters long and in the middle it is a little over 700 meters wide. From south to north it becomes narrower in form. The northern cape is called Lugliong. In the west of the northern half, at the inland water, there is a bay which serves as a landing place. Here the village is located. A sketch map of the island was made between November 20-26, 1909 by the First Officer of the "Peiho" [MR: see 4: Krämer 15]. It showed the relative depths of the bay; its southern cape is [16] called Paliauei, whereas the northern corner is known as Uŏlebugui, "at the corner." [MR: see house 30 on map 3. 4: Krämer 18]

A sandbank separates the bay from the approximately 30-meter-deep lagoon; the sandbank from north to south has depths of 9, 3, 7, 12, 14 and 16 meters; inland from the sandbank the depth is 19 meters, which quickly decreases towards the land. This depth is called Mólog as the plan of the settlement on map 3 shows; southward it ends in a boat canal tauali vá. Thus conditions are similar to those of the eastern basin of the Onoun atoll at the island of Pisaras, except that the latter is much smaller than Lámotrek and projects eastward out of the line of the encircling ring. . . . The settlement is located inside the western bend [MR: of the bay] in a wide swinging arch. Inside the latter, in the

south, there is a small additional bay; it is less obvious on map 3 but is definitely shown on plate 1b [MR: 4: Krämer 413, Plate 1b]. Here the boathouse Aboi in which we stayed is located. Southward the bay ends in the wide sandy beach of cape Paliauei, where the Faktaipu and the house of the trader Lewis are located.

4: Krämer--17-19 (1909) 1937 Woleaians
116, 361 Lamotrek

The settlements of Lámotrek. Study of 1909.

The large village...is located at the western shore of the lagoon and mainly in the bend of the bay.... The uninhabited part of the island is called gápilam (see house 19).

A unit of buildings with its surrounding land is called bókut or búkut (illustration 51 page 109 [MR: in source]).

A building unit comprises a living house, supply house, cooking house and a menstrual lodge.

The village is divided into the "south" Jaur, where the fal canoe houses a. Faletaipu and b. Jalói (abei) [MR: 4 Kramer 413 plate 16], which is beautifully decorated in the interior (see color plate II [in source]) are located; [19] in addition there are here properties 1-12. In this section there also stood the house of the trader Lewis which was called Ngalangisét "near the sea" and south of it on cape Paliauei the burials of lot 5 were found. On the land of the headchief Sukurang stood the fal'lap Marólipei, the house of the spirits.

In the "center" Lúgalap there were the canoe houses c. Lúgal and d. Kulong, and properties 13-20. This is also the location of the grove with the house of the spirits fal'lap Lématak (or Lámetag)which in 1890 already lay in ruins. Dense virgin forest like cordia shrubbery was found here [MR: 4: Kramer 413, plate 46].

The "North" is called Jefang: it comprises the canoe houses e. Falemára, f. Gatia rákes, g. Vorietag, and h. Gauárag (or Gauósag), i. Falemáreg, and k. Uelibugui, lots 21-30. The boundary of the land is called róros.

List of Houses on Elato

In the main they are primitive huts since no real reconstruction work has been done since the typhoon of 1907.

1. Etsatiù, bush hut
2. Kŭ ŭei, birth hut
3. Cooking house, măl ŭm, which at the same time is used as sleeping quarters for menstruating women.
4. House for women in childbed, im a fătsŭ...
5. Ilaroéi, visitors from Oleai
6. Bŭŏl i bŭgi, visitors from Oleai
7. Tsŭiĕrăs, visitors from Oleai.
8. Fazefăl, 1 ♂ (♀ died)
9. Faliŏp, 3 ♂, 3 ♀, --, 1 girl
10. Im mo gitigit
11. Legóŭria, 5 ♂, 3 ♀, 1 boy, 1 girl
12. Făl e gílĭau, 1 ♀
13. Gitoŭ, 4♂, 2♀, 2 boys. It is owned by Oleai islanders from Uazagor, who also have property and a house there, and who at times live on Oleai and at times on Elato
14. Pâùûĭl, 3 ♂, 4 ♀, --, 1 girl

The cooking house is built from the hut found on deck of a ship-wrecked boat.

Stone foundation of the former " great house" maifŭrz.

Remnants of the former "great house" --eaûr e lăp.

15. Olegešārs, 5 ♂, 5 ♀, --, 1 girl
16. Nogŭr, 5 ♂, 3 ♀, 1 boy, 1 girl
17. Lugăl; Japanese trading station, now deserted
18. Uŏlĕl, people from Pâû i ĕl come here
19. Kătogălū, 2 ♂, 2 ♀, 1 boy and 1 girl
20. Kolŭng, 1 ♂, 1 ♀
21. Uŏlipār, 4 ♂, 3 ♀, 1 boy, --
22. Kŭsorŏlo, 4 ♂, 4 ♀, 1 boy, 1 girl
23. Kăti e făl, house of the chief, 4 ♂, 1 ♀, --
24. Rolegorăl, belongs to 23

    On the house there is a drawing of a vulva, māk e boār.
25. Matal ie eăl, is inhabited only at the time of the mosquito plague since then a fresh wind blows there
26. Merekam. Birth hut, house for women in childbed and menstrual lodge of the visitors from Oleai. [31]

4: Krämer--30-31
116, 361, 162

(1909) 1937

Woleaians-3
Elato

Property units:	13 ♂	41
Buildings:	26 ♀	32
	boys	7
	girls	7
	total	87

The true old Elato natives are about to die out.

Only the people settled on Elato have been included in the enumeration. Not listed are the Oleai islanders--numbering about 180--who since the typhoon of 1907 have found shelter, and who live very closely together in miserable huts. They intend soon to return to Oleai.

The location of the houses is shown in Figure 50 [VMM: see source] and Plan 3 [VMM: see 4: Krämer 18]. A building complex is shown in Figure 51...[VMM: see source].

4: Krämer--183 (1909) 1937 Woleaians
116, 361 Woleai

The dwellings of the natives are located on the sides of the islands facing the interior lagoon. They extend along the entire strip of sandy beach and there are no obvious boundaries between the various villages.

4: Krämer--208 (1909) 1937 Woleaians
116, 361

The settlement plan of Volóa (Plan 6) [VMM: 4: Krämer 208] shows a wide path extending the entire length of the southern beach; it was laid out on order of the government. It begins at the SE cape of Matónnap and ends at the west cape. The plan shows all the details.

12: Lutke--144 (1828) 1835 Woleaians
361 Woleai

The interior of the island is charming; it is a grove intersected with paths leading in every direction and dotted with clearings where there are houses.

15: U.S. Hydrographic Office--543-544 1938 Woleaians
116, 361 Woleai

"The white houses of the police station and [544] the branch office of the South Sea Trading Co. are located on the southwestern side of Woleai, the northeastern island."

28: Spiro--5-6
116, 361, 342

(1947-48) 1949

Woleaians-1-2
Ifalik

"Within the district there is no indication of a city planning board, which might have allocated homesteads with an eye to symmetry. The homesteads are scattered throughout the district, some touching the main path, some being much further inland, some being isolated from others, some being contiguous, so that the boundaries of the two touch. But within the court yard of each homestead there is almost monotonous regularity, each having at least one 'sleeping house' (im), a cooking shed (malum), and almost all having a menstrual hut, the architiecture [sic] of each structure being similar, if not identical, to that in the other households. The average house is a one room building about 12 feet at its apex. [6] The frame of the house consists of four upright pillars, stuck into the ground. These are connected by light, supply branches, arranged in wicker-work fashion, to form the walls, which are about four feet in height. The gabled roof is constructed in the same fashion, the entire structure being held together by native rope. The walls are enclosed with coconut branch mats, and the roof with plaited coconut branches, tied to the frame, and superimposed one on the other in tile fashion, so as to repel the rains. The roof overhangs the walls, and reaches within three feet of the ground, protecting the house from the sun, and the dripping water. The house has a number of entrances, usually one at each of the four corners, and two on each side of the house. The entrance which is quite low--one must stoop in order to enter--is a

passageway, not a door. In the case of rain or cold it is covered with a mat, but ordinarily it is open, there being little need for privacy, nor any fear of burglary."

28: Spiro--7 [2] (1947-48) 1949 Woleaians
116, 361 Ifalik

"Aside from the cluster of settlements which is cleared of all vegetation, (8) the interior of islands are uncleared bush, though there is a net-work of footpaths traversing the two islands."

"8. Trees are cleared because of the danger of falling coconuts. This fact reveals the naivete of the urbanite in the tropics. I often commented to Dr. Burrows when we first arrived on the stupidity of clearing the courtyards of coconut trees, which could protect the houses from the hot rays of the sun. It was not until we had lived on the island for some time that I realized the dangers of the falling coconuts, particularly in a blow."

41: Bates & Abbott N-5 (1953) 1958
OR21 Woleai OR21
Ifaluk

gauge wasn't unpacked and set up yet. A stiff wind came up in the afternoon and kept increasing in force. Late in the afternoon Tom came by with Maroligar, the number two chief. Tom pointed out across the lagoon to the west and said, "Maybe typhoon." Maroligar seemed somewhat worried as well. What the two wanted, apparently, was a weather prediction—from us newcomers to the tropical Pacific! It showed a touching and completely misplaced faith in the famous "American know-how." I was in charge of the meteorology department and I peered at the thermometer (79°F at 5:45 P.M.) and barometer (1005 millibars) but I was unable to draw any deductions from these helpful facts.

In the evening, quite a number of men gathered in back of the Fan Nap, clearly worried about the weather. Maroligar borrowed one of the big Navy battery flashlamps and learned how to turn it on and off. He wanted some sort of a light so that if the weather worsened during the night, he could round everyone up and lead them to some safer spot, perhaps the boulder ridge on the windward side of the island—the highest spot, some fifteen feet above sea level. The houses were mostly along the lagoon shore and Ted remembered that waves had reached to the Fan Nap on his previous stay, with a wind of considerably less than typhoon violence. Don and I read what there was on typhoons in the books we had brought along, and I tried to remember what I could about the characteristics of Caribbean hurricanes—but nothing helpful came out of this.

The wind settled down to a steady blow, and I comforted myself, going to sleep, by thinking that hurricanes struck suddenly, after a period of still, oppressive heat, so that this slow build-up of wind could hardly be dangerous—misinformation, but none-the-less comforting.

The next day, Saturday, started out cold, with a completely overcast sky. But the rain had let up, so we sallied forth to begin work. Our first project was to make a census of the people on the island. Ted had made a census on his 1948 visit and he wanted to get a record of the changes. For Don and me, the census would be an essential basis for our studies of "human ecology." Further, if we made the census our first item of business, it would give us an opportunity to meet all of the people on the island.

41: Bates & Abbott N-5 (1953) 1958
OR21 Woleai OR21
Ifaluk

Ted, of course, was in charge of the census operation. Tom acted as interpreter. Fagolier, the paramount chief, and Maroligar, the number two chief, went along, giving the highest possible official sanction to the procedure. The party also included a young man named Bakalimar—shortened to Bakal for ordinary purposes—who had been assigned by the chiefs to work with us, acting as general handyman and, most importantly, as dishwasher. (We did our own cooking; or, perhaps more accurately, our own can-opening.)

We were also accompanied by Tony. Tony was from the atoll of Ulithi, some 375 miles northwest of Ifaluk. He was a young man of perhaps eighteen, and had come to Ifaluk with his younger brother on the trade ship, some months before our arrival, to visit relatives. The Coast Guard had a station on Ulithi, where Tony had worked, and where he had learned fluent English. He was of no use as an interpreter in the census operation, however, because of his lack of familiarity with the Ifaluk household and clan arrangements, and because his youth made the questioning seem almost impertinent. The job required the maturity, dignity and local knowledge possessed by Tom. Tony's name, Antonio, was official, because Ulithi had been converted by a Roman Catholic Mission some years earlier—a process that included the adoption of Christian names.

The houses of Ifaluk were all on the two largest islets of the atoll, Falalap and Falarik, which were separated by a shallow and rather narrow pass. The Fan Nap, near the southern end of Falarik, was roughly in the center of the inhabited area. We started the census with the southernmost houses of Falalap, with the idea of working gradually northward until the count, household by household, was finished.

Three households—twenty-six people—were catalogued that first morning. Tom and Ted would lead the way into a household area, going inside if it was drizzling, or sitting on mats in the open during dry intervals. The available people of the household would gather about—and the available people included all of the men, all of the children except those who got scared at the strange activity and ran away, and all of the women except those under temporary quarantine in a menstrual hut.

41: Bates & Abbott N-5 (1953) 1958
OR21 Woleai OR21
Ifaluk

and then pace directly toward him. Don would sight on Tony (or me on arrival) to get the direction, and I would call back the paces so that Don could draw directly on the base map.

The main trail of Falarik, which I got in the habit of calling "the broad highway," or sometimes "el camino real," ran through the coconut grove parallel to the lagoon shore, generally twenty or thirty yards in from the water. It was about two yards wide, and neatly marked on each side by a row of moss-covered coral rocks. This broad highway ran between the Fan Nap and the lagoon, and passed directly in front of five of the big canoe houses that faced the lagoon along the Falarik shore. The sixth canoe house on Falarik was away from the trail on the point of land that jutted toward Falalap. There were also two canoe houses on Falalap, one facing the lagoon, and the other facing the pass between the two islands.

The canoe houses, clearly distinguishable on the aerial photographs, were convenient reference points in mapping. They served not only for the storage of canoes, nets, lines and other gear, but also as social centers for the men of the atoll. Groups gathered there to talk, or rest, or weave nets, or carry on the never-ending job of making twine or rope from sennit, coconut fiber. A big sea-going canoe was being built in the Falepenach canoe house, near the Fan Nap, during the summer of 1953. This provided me with a convenient and continuing subject for photography.

The broad highway ran for almost a mile along the lagoon shore of Falarik, extending considerably beyond the last habitation, toward the north end of the island, ending abruptly in the middle of nowhere. This northern tip of the island, beyond the end of the trail, was a wild tangle of vegetation, relatively little visited and little used. Except for this northwest tip, the whole of the lagoon margin of the island was a park-like coconut grove, kept clear of weeds or shrubs with almost no other kind of tree—only an occasional breadfruit tree near the household areas, and a few other things like the big *Barringtonia* by the Sabolap canoe house.

The entire course of the broad highway was thus through the open coconut grove. The habitations were mostly set at some distance back from the highway, near the "boondock line."

41: Bates & Abbott N-5 (1953) 1958
OR21 Woleai OR21
Ifaluk

We picked up that word "boondock" in Guam, and very useful it proved to be. It became an important part of the Abbott-Bates vocabulary, and may well have also infected the Ifalukian speech. In Guam, it was used to refer to the wild tangle of miscellaneous vegetation that had taken over so much of the island after the disruption of the war.

The boondocks on Ifaluk were the parts of the atoll that were not clearly something else—that is, not coconut grove, not taro swamp, not household area. The boondocks were not exactly wild, because all sorts of useful things grew there, including planted coconuts and breadfruit trees. They were not exactly cultivated either. Such areas could thus hardly be called "jungle" or "scrub"; and "forest" seemed rather inappropriate. "Boondock" was just the word; though we could perhaps better have used the Ifalukian equivalent, niwel.

The boundary between the coconut grove and the boondocks was sharply defined: weeds and shrubs were kept cleared out of the coconuts only up to this definite line—the boondock line. This again roughly paralleled the lagoon shore, fifty or sixty yards in. We plotted it on our map, later, when the trail mapping seemed fairly well in hand.

The habitations, deep in the coconut grove and near the boondock line, were grouped into "households." The census showed that there were twenty-six such households on the atoll, eleven on the island of Falalap, and fifteen on Falarik. The Falarik households were not scattered evenly along the highway and lagoon, but formed two clusters or villages, one called Rauau, at the south end of the island—the Fan Nap was in the middle of this—and the other called "Falarik" (the address would probably be "Falarik, Falarik") with a gap of about a quarter of a mile along the broad highway between the two.

The whole system of land ownership of the island was built around these households, each of which had a name. Later in the summer we tried to map the holdings of one household, Falepenach. These holdings included not only the immediate vicinity of the living quarters, but also several patches of boondock and coconut grove on Falarik, and patches in the big taro swamp on Falalap. The patch arrangement seemed to provide that each household would "own" its share of each of the different kinds of land.

The households varied greatly in size, from one which included

41: Bates & Abbott N-5 (1953) 1958
OR21 Woleai OR21
Ifaluk

133 sand. Out from the beach there was a hundred yards or so of coral platform, largely exposed at low tide, then finally the edge of the reef itself against which the great rollers of the Pacific broke their force all the year around.

133 361 The other inhabited island, Falalap, was rather different: a large, rounded blob sticking out into the sea and spoiling the neat circle of the atoll. The habitations were all on the northwest end of the island, across the narrow pass from Falarik. Here, too, there was a maintained park-like area, corresponding to the lagoon-side coconut grove of Falarik: but on Falalap, coconuts and large breadfruit trees were interspersed, giving a different "feel" to the landscape.

133 137 262 The center of Falalap was largely a great swampy area carefully cultivated by the women of both islands. Two kinds of aroids (taro), *Colocasia* and *Cyrtosperma*, were grown there for their edible, starchy roots which, with breadfruit, formed the staple food of the atoll. We did not get around to exploring this region in any detail until late in the summer.

123 206 The mapping operation was kept up fairly steadily for several days, but there were always intermissions. On Friday afternoon—the second day of the mapping—Bakal and Yani had no difficulty in persuading us to knock off mapping and go spear fishing. We all piled into Bronson's skiff and rowed over to the shore of Ella, outside the pass into the lagoon. Don was rather snooty about this skiff, remarking that a Western rowboat looked like a garbage scow beside the trim and speedy Ifalukian canoes. But Yani and Bakal liked it—perhaps partly because it was foreign, but also because it was steady and because it [136] could hold several people easily. Don, maintaining his scorn, called it the BWUP after one of the more ungainly species of trigger-fish.

227 Yani and Bakal each had steel-pointed wooden spears, about fifteen feet long; and short, slender steel spears. The long spears were for poking; the short spears were shot from a sling. The sling looked like a strip of inner-tube; at one end was a string loop, tied on firmly; at the other end the rubber was tied into a loop just large enough to slip over the thumb. With the rubber loop over the right thumb, the string loop was pressed over a slight notch in the butt of the spear, and the spear then simply pulled back with the left hand and let go. It worked like a Hawaiian sling spear, with the hand replacing the hollow bamboo grip.